10779551

OPTIMAL BINARIZATION OF GRAY-SCALED DIGITAL IMAGES VIA FUZZY REASONING

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is related to an application entitled Image Edge Extraction Via Fuzzy Reasoning, which is commonly owned with the subject application and is to be filed under Docket Number KSC-12278.

ORIGIN OF THE INVENTION

[0002] The invention described herein was made in the performance of work under a NASA contract and is subject to the provisions of Public Law 96-517 (35 U.S.C. §202) in which the contractor has elected not to retain title.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0003] The present invention relates in general to a method and system for converting gray scale images to binary images which employs fuzzy reasoning to calculate an optimal binarization threshold value.

2. Description of the Background Art

[0004] Conversion of gray-scale digital images to binary images is of special interest because an image in binary format can be processed with very fast logical (Boolean) operators by assigning a binary value to each of the image's pixels. A binary one value indicates that the pixel belongs to the image foreground, which may represent an object in the image, while a binary zero value indicates that the pixel is darker and belongs to the image's background. Since most image display systems and software employ gray-scale images of 8 or more bits per pixel, the binarization of these images